

CLAIMS

Claims 1-31 (cancelled)

Claim 32 (Currently Amended): A composite comprising:

a sandwich structure comprising at least two surface layers attached to a central layer of rigid epoxy foam wherein the layer of epoxy foam comprises:

- i. from about 15% to about 65% by weight epoxy resin;
- ii. is at least 1.5 times the combined thickness of the two surface layers; and
- iii. has a density of from 0.2 to 1.5 gram/cc;

wherein the resulting composite has a flexural modulus as measured by ASTM D790/ISO 178 from 200 mPa to 700 mPa; and

wherein the at least two surface layers are matching an internal tube structure located inside of an and external tube structure[[s]], and the internal tube structure cross-section of the at least two surface layers are is hollow tubes; and

wherein the epoxy foam is embedded in the two surface layers..

Claim 33 (Previously Presented): A composite according to claim 32 in which the foam has a density of between 0.4 and 1.5 gram/cc.

Claim 34 (Currently Amended): A composite according to claim 32 in which the surface layers are a metal foil such as aluminium made of aluminum or steel [[foil]].

Claim 35 (Previously presented): A composite according to claim 32 in which the surface layers are porous, fibrous, or both.

Claim 36 (Currently Amended): A composite according to claim 32 in which the surface layers are fibrous and the fibres are carbon fibre, glass fibre, or Kevlararamid fibre

Claim 37 (Cancelled):

Claim 38 (Cancelled):

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Claim 39 (Currently Amended): A composite according to claim 32, wherein the internal tube structure and the external tube structure are in which the surface layers are concentric tubes.

Claim 40 (Currently Amended): A composite according to claim 32 in which the surface layers are made of a metal that includes aluminum.

Claim 41 (Cancelled):

Claim 42 (Previously Presented): A composite according to claim 32 in which the composite is part of a construction building or a transportation vehicle.

Claim 43 (Currently Amended): A composite according to claim 42 in which the composite is configured to provide reinforcement against crash in vehicles against a crash.

Claim 44 (Currently Amended): A composite according to claim 43 in which the composite is configured to provide reinforcement to an automobile door reinforcement.

Claim 45 (Currently Amended): A composite according to claim 32 in which the composite is configured to provide strength in a sporting good.

Claim 46 (Currently Amended): A composite comprising:

a sandwich structure comprising:

at least two surface layers attached to a central layer of rigid epoxy material foam wherein the layer of epoxy material foam comprises:

- a) from about 15% to 65% by weight epoxy material resin,
- b) is at least 1.5 times the combined thickness of the two surface layers, and
- c) the foam epoxy material has a density of from 0.3 to 0.6 gram/cc, wherein:

- i. each of the at least two surface layers has a thickness of from 0.2 to 10 millimeter[[e]]s and the central layer of a rigid epoxy material foam has a thickness of from 2 to 200 millimetres;
- ii. the composite has a flexural modulus as measured by ASTM D790/ISO 178 from 200 mPa to 700 mPa;
- iii. the composite has a density of from 0.1 to 1 gram/cc;
- iv. the surface layers are matching internal and external structures; and
- v. the cross-section of the surface layers are an internal tube structure located inside of an external tube structure and the internal tube structure is hollow tubes;
wherein the epoxy material is embedded in, and optionally through, the two surface layers.

Claim 47 (Currently Amended): A composite according to claim 46 in which the surface layers are a [[of]] metal foil such as aluminium made of aluminum, [[or]] steel foil, or plastic film, or sheeting, made of such as polypropylene, [[or]] polyethylene film, or polyethylene terephthalate film.

Claim 48 (Previously Presented): A composite according to claim 46 in which the surface layers are porous, fibrous, or both.

Claim 49 (Cancelled):

Claim 50 (Cancelled):

Claim 51 (Cancelled):

Claim 52 (Currently Amended): A composite according to claim 32, wherein the internal tube structure and the external tube structure are concentric and are made of in which the surface layers are carbon fibre formed as concentric tubes.

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Claim 53 (Currently Amended): A composite according to claim 46, wherein the internal tube structure and the external tube structure are concentric and are made of ~~in which the surface layers are carbon fibre formed as concentric tubes.~~

Claim 54 (Currently Amended): A composite according to claim 32, in which the surface layers are a plastic film or sheeting ~~such as~~ made of polypropylene, [(or)] polyethylene film, or polyethylene terephthalate film.

Claim 55 (Previously Presented): A composite according to claim 32, wherein the central layer of rigid epoxy foam has a thickness from 5 mm to 15 mm.

Claim 56 (Previously Presented): A composite according to claim 32, wherein the two surface layers are made of different materials.

Claim 57 (Cancelled):

Claim 58 (New): A composite according to claim 44, wherein all of the at least two surface layers are encased with the epoxy foam.